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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : **H04B** | **A2**

(11) International Publication Number: **WO 94/28635**

(43) International Publication Date: 8 December 1994 (08.12.94)

(21) International Application Number: PCT/HU94/00015

(22) International Filing Date: 20 May 1994 (20.05.94)

(30) Priority Data:
U 93 00145 21 May 1993 (21.05.93) HU

(71)(72) Applicant and Inventor: KISS, József [HU/HU]; Mihály u. 18, H-2120 Dunakeszi (HU).

(74) Agent: DANUBIA; Bajcsy-Zsilinszky u. 16, H-1051 Budapest (HU).

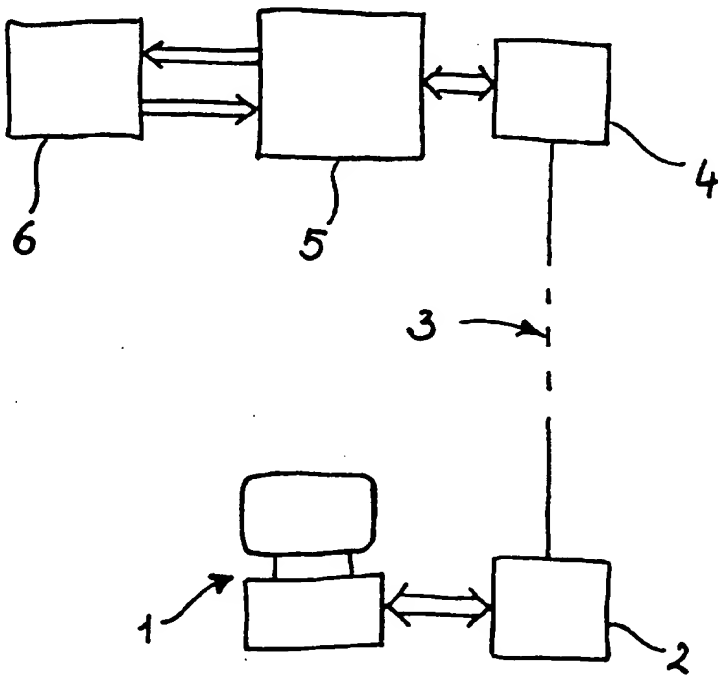
(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KG, KP, KR, KZ, LK, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: REMOTE CONTROL SYSTEM FOR ELECTRICALLY AND ELECTRONICALLY CONTROLLED EQUIPEMENTS VIA LONG-DISTANCE CONNECTION

(57) Abstract

The remote control system comprises a central processing unit (1) connected via a long-distance connection (3), e.g. telephone line or radio connection to an equipment (6) to be controlled. The system further comprises a microcprocessor control unit (5) which may be e.g. a board computer of the equipment (6) to be controlled, being connected with the central processing unit (1) via said long-distance connection (3).



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Description

REMOTE CONTROL SYSTEM FOR ELECTRICALLY AND ELECTRONICALLY CONTROLLED EQUIPEMENTS VIA LONG-DISTANCE CONNECTION

Field of the Invention

The invention relates to remote control, preferably remote operation, remote inspection and correction of operative parameters, and remote indication and prevention of possible errors of electrically and/or electronically controlled equipments via long-distance connection, e.g. via telecommunication line. The suggested system is particularly suitable for remote control of microprocessor-controlled equipments such as board computers, doors, programable sprinkler systems etc. The suggested system can provide remote status inspection, remote diagnostics, control and correction of operative parameters, as wel as remote error indication, localization and averting of possible errors.

Background Art

Microprocessor-controlled remote control systems have already been known. Booklet No. 826 MPS of the Italian firm FAAG shows a door control system wherein the equipment to be controlled is supplied with a system of press-buttons by means of which a number of logical functions can be operated. A deficiency of the system is that operating of the system of press-buttons and programming of the control is rather complicated and can only be carried out on site, and it needs skilled personnel. A further deficiency is that there ins't provided any sent-back information about the programming.

Disclosure of the Invention

The object of the invention is to provide a remote control system which is suitable for many different remote control purposes, its operation doesn't require special skills, and can provide sent-back information about the system parameters, status and errors.

The remote control system of the invention comprises a central processing unit connected to a long-distance connection, and it further comprises a microprocessor control unit directly connected to the equipment to be controlled, and connected with the central processing unit via said long-distance connection.

An essential part of the system is the microprocessor control unit, being in bi-directional direct connection with the equipment to be controlled. The microprocessor control unit sends control commands to the equipment and receives sent-back signals, status and error signals etc. The remote communication is realized between the microprocessor control unit and the central processing unit via said long-distance connection, preferably telephone line, in which case both the microprocessor control unit and the central processing unit are connected through a modem onto the long-distance line.

By means of the central processing unit, preferably constituted by a PC, the controlled data, parameters etc. can be challenged, processed, evaluated and/or displayed on monitor or by printer. Also by means of the central processing unit, e.g. by use of a keyboard, commands can be given to the microprocessor control unit and information can be challenged

therefrom. Control commands for correcting the operative parameters of the controlled equipment as well as for indicating or averting errors can also be communicated to the microprocessor control unit at the equipment end of the long-distance line.

Brief Description of the Drawings

The invention will be described in the following with reference to the accompanying drawings, in which:

Fig. 1 is a block diagramm of a preferred embodiment of the remote control system of the invention.

Description of the Preferred Embodiment

The system shown in Figure 1 is a remote control system for controlling an equipment 6, in this example a vehicle having having a board computer depicted as microprocessor control unit 5. The system long-distance connection 3 is constituted by a telephone line and partly a radio telephone connection. The microprocessor control unit 5 is connected by means of a modem 4 onto the telephone line 3.

The system further comprises a central processing unit 1 equipped with a keyboard and a monitor or printer. The central processing unit 1 is connected through a modem 2 to the telephone line 3. The telephone line 3 and the modems 2 and realize a bi-directional connection between the central processing unit 1 and the microprocessor control unit 5 of the vehicle 6. By means of the keyboard commands can be communicated to the microprocessor control unit, and status position and error informations, operative parameters etc. can be challenged therefrom and displayed on the monitor or printed. If necessary, the operative parameters and possible errors of the

equipment 6 can be corrected by use of the keyboard, at the distant end of the long-distance connection 3.

The central processing unit 1 advantegously can be a PC, a note-book a laptop or even a system central computer. The long-distance connection is preferably constituted by telephone line and or radio connection, or any other telecommunication or telecontrol network or system.

WHAT IS CLAIMED IS:

1. A remote control system for remote control of electrically and/or electronically controlled equipments via long-distance connection, comprising a central processing unit connected with an equipment to be controlled via said long-distance connection, characterized, in that it further comprises a microprocessor control unit (5) directly connected to the equipment (6) to be controlled, and connected with the central processing unit (1) via said long-distance connection (3).

2. A remote control system as claimed in claim 1, characterized in that the long-distance connection (3) is constituted by telephone line and/or radio connection, and the central processing unit (1) and the microprocessor control unit, respectively, are connected through a modem (2, 4) onto the telephone line.

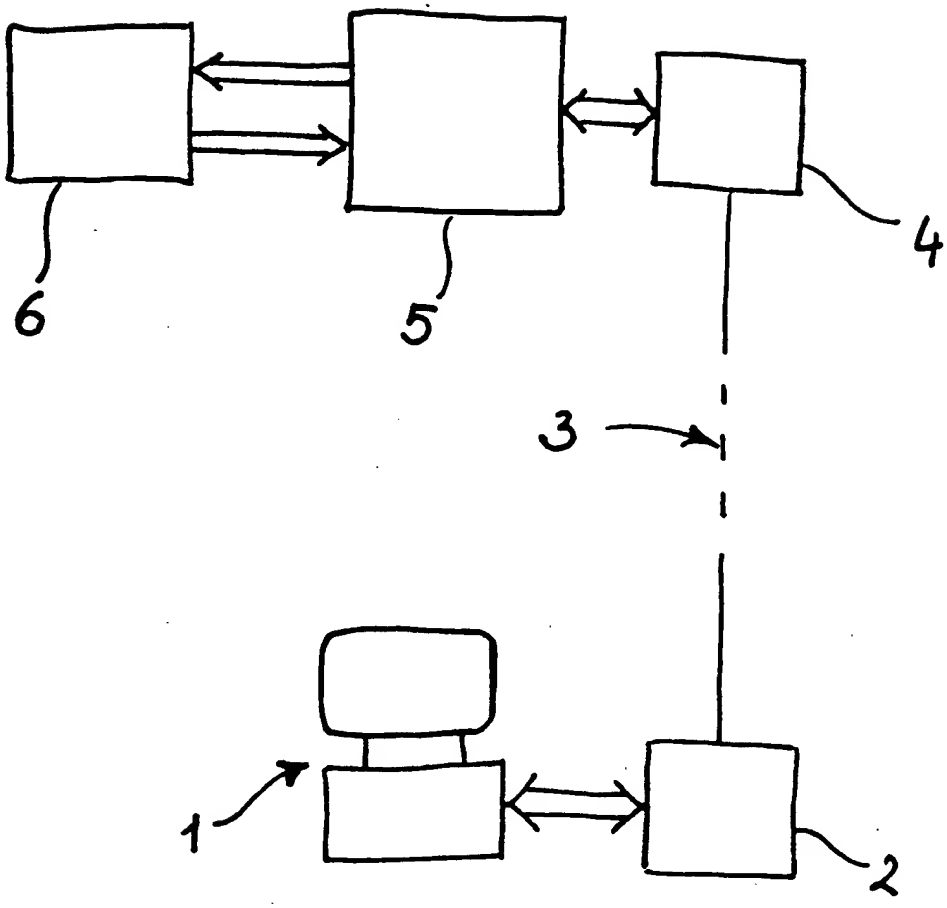
3. A remote control system as claimed in claim 1 or 2, characterized in that the equipment (6) to be controlled is microprocessor--controlled per se.

4. A remote control system as claimed in any of the preceeding claims, characterized in that the equipment (6) to be controlled is a remote controlled door or gate.

5. A remote control system as claimed in any of the preceeding claims, characterized in that the equipment (6) to be controlled is a vehicle

or a machine comprising said microprocessor control unit (5) as a board computer.

6. A remote control system as claimed in any of the preceeding claims, c h a r a c t e r i z e d in that said central processing unit (1) is constituted by a PC.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